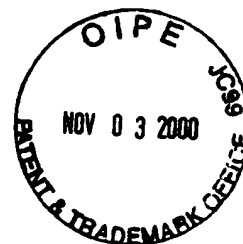


Autobid #17

SEQUENCE LISTING



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NOV 07 2000

TECH CENTER 1600/2900

<110> Morell, Andreas  
Imboden, Martin  
Stadler, Beda  
Miescher, Sylvia  
Vogel, Monique  
Amstutz, Hanspeter

<120> POLYPEPTIDES CAPABLE OF FORMING ANTIGEN BINDING  
STRUCTURES WITH SPECIFICITY FOR THE RHESUS D ANTIGENS,  
THE DNA ENCODING THEM AND THE PROCESS FOR THEIR  
PREPARATION AND USE

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<130> 6816/P63221US0

<140> 09/147,443

<141> 1999-01-21

<150> PCT/EP97/03253

<151> 1997-06-20

<150> EP 96810421.6

<151> 1996-06-24

<160> 77

<170> PatentIn Ver. 2.1

<210> 1

<211> 375

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(375)

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tcc ctg aga ctc tcc tgt ata gcg tct gga ttc acc ctc agg aat tat 96  
Ser Leu Arg Leu Ser Cys Ile Ala Ser Gly Phe Thr Leu Arg Asn Tyr  
20 25 30

gcc atg cac tgg gtc cgc cag gct cca ggc aag ggg ctg gag tgg gtg 144  
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

gca ggt ata tgg ttt gat gga agt aac aaa aac tat gca gac tcc gtg 192  
Ala Gly Ile Trp Phe Asp Gly Ser Asn Lys Asn Tyr Ala Asp Ser Val  
50 55 60

aag ggc cga ttc acc atc tcc aga gac aat tcc aag aac acg ctg tat 240  
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
65 70 75 80

ctg caa ctg aac agc ctg aga gac gag gac acg gct gtg tat tat tgt 288  
Leu Gln Leu Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr Tyr Cys

85										90					95					
gcg	aga	gag	cga	gca	gca	cgt	ggt	att	tct	agg	ttc	tat	tac	tac	atg	336				
Ala	Arg	Glu	Arg	Ala	Ala	Arg	Gly	Ile	Ser	Arg	Phe	Tyr	Tyr	Tyr	Met					
			100					105					110							

gac	gtc	tgg	ggc	aaa	ggg	acc	acg	gtc	acc	gtc	tcc	cca	375
Asp	Val	Trp	Gly	Lys	Gly	Thr	Thr	Val	Thr	Val	Ser	Pro	
		115					120					125	

<210> 2  
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Ser	Leu	Arg	Leu	Ser	Cys	Ile	Ala	Ser	Gly	Phe	Thr	Leu	Arg	Asn	Tyr
			20					25					30		
Ala	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val
		35					40					45			
Ala	Gly	Ile	Trp	Phe	Asp	Gly	Ser	Asn	Lys	Asn	Tyr	Ala	Asp	Ser	Val
	50					55					60				
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Thr	Leu	Tyr
	65				70					75				80	
Leu	Gln	Leu	Asn	Ser	Leu	Arg	Asp	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys
			85					90					95		
Ala	Arg	Glu	Arg	Ala	Ala	Arg	Gly	Ile	Ser	Arg	Phe	Tyr	Tyr	Tyr	Met
			100					105					110		
Asp	Val	Trp	Gly	Lys	Gly	Thr	Thr	Val	Thr	Val	Ser	Pro			
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<210> 3  
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 <222> (1)..(318)

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Val	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	Asp	Arg	
1				5					10				15			
gtc	acc	atc	act	tgc	cgg	gca	agt	cag	agc	att	agg	agc	cat	ttg	aat	96
Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Ser	Ile	Arg	Ser	His	Leu	Asn	
			20					25					30			

tgg tat cag cag aaa cca ggg aaa gcc cct aag ttg ctg atc tat ggt 144  
 Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Gly  
           35                          40                          45

gcg tcc act ttg caa agt ggc gtc cca tca agg ttc agt ggc agt ggc 192  
 Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
           50                          55                          60

tct ggg gca gtt ttc act ctc acc atc gcc agt cta caa cct gaa gat 240  
 Ser Gly Ala Val Phe Thr Leu Thr Ile Ala Ser Leu Gln Pro Glu Asp  
           65                          70                          75                          80

ttt gca act tac tac tgt caa gag agt tac agt aat cct cta atc acc 288  
 Phe Ala Thr Tyr Tyr Cys Gln Glu Ser Tyr Ser Asn Pro Leu Ile Thr  
                           85                          90                          95

ttc ggc caa ggg aca cga ctg gag act aaa 318  
 Phe Gly Gln Gly Thr Arg Leu Glu Thr Lys  
                           100                          105

<210> 4  
 <211> 106  
 <212> PRT  
 <213> Homo sapiens

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Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Arg Ser His Leu Asn  
           20                          25                          30

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Gly  
           35                          40                          45

Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
           50                          55                          60

Ser Gly Ala Val Phe Thr Leu Thr Ile Ala Ser Leu Gln Pro Glu Asp  
           65                          70                          75                          80

Phe Ala Thr Tyr Tyr Cys Gln Glu Ser Tyr Ser Asn Pro Leu Ile Thr  
                           85                          90                          95

Phe Gly Gln Gly Thr Arg Leu Glu Thr Lys  
           100                          105

<210> 5  
 <211> 375  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(375)

<400> 5  
 cag gtg aaa ctg ctc gag tct ggg gga ggc gtg gtc cag ccg ggg ggg 48

Gln	Val	Lys	Leu	Leu	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Pro	Gly	Gly		
1				5					10					15			
tcc	ctg	aga	ctc	tcc	tgt	gaa	gcg	tct	gga	ttc	gcc	ctc	aga	agt	tct		96
Ser	Leu	Arg	Leu	Ser	Cys	Glu	Ala	Ser	Gly	Phe	Ala	Leu	Arg	Ser	Ser		
			20					25					30				
ggc	atg	cac	tgg	gtc	cgc	cag	gct	cct	ggc	aag	ggg	ctg	gag	tgg	gtg		144
Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val		
		35					40					45					
gca	ctt	ata	tgg	ttt	gat	gga	agt	atc	aga	tcg	tat	gca	gaa	tcc	gtg		192
Ala	Leu	Ile	Trp	Phe	Asp	Gly	Ser	Ile	Arg	Ser	Tyr	Ala	Glu	Ser	Val		
	50					55					60						
aag	ggc	cga	ttc	acc	atc	tcc	aga	gac	act	tcc	aag	aac	acc	cta	tat		240
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Thr	Ser	Lys	Asn	Thr	Leu	Tyr		
	65				70					75					80		
ctc	caa	atg	cgc	agt	ctg	agt	gcc	gac	gac	acg	gct	gtg	tat	tac	tgt		288
Leu	Gln	Met	Arg	Ser	Leu	Ser	Ala	Asp	Asp	Thr	Ala	Val	Tyr	Tyr	Cys		
				85					90					95			
gcg	aga	gac	aag	gcg	gtt	cgg	gga	att	agc	agg	tac	aac	tat	tac	atg		336
Ala	Arg	Asp	Lys	Ala	Val	Arg	Gly	Ile	Ser	Arg	Tyr	Asn	Tyr	Tyr	Met		
			100				105						110				
gac	gtc	tgg	ggc	aaa	ggg	acc	acg	gtc	acc	gtc	tcc	tca					375
Asp	Val	Trp	Gly	Lys	Gly	Thr	Val	Thr	Val	Ser	Ser						
		115					120				125						

<210> 6  
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 <212> PRT  
 <213> Homo sapiens

Gln	Val	Lys	Leu	Leu	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Pro	Gly	Gly		
1				5					10					15			
Ser	Leu	Arg	Leu	Ser	Cys	Glu	Ala	Ser	Gly	Phe	Ala	Leu	Arg	Ser	Ser		
			20					25					30				
Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val		
		35					40					45					
Ala	Leu	Ile	Trp	Phe	Asp	Gly	Ser	Ile	Arg	Ser	Tyr	Ala	Glu	Ser	Val		
	50					55					60						
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Thr	Ser	Lys	Asn	Thr	Leu	Tyr		
	65				70					75					80		
Leu	Gln	Met	Arg	Ser	Leu	Ser	Ala	Asp	Asp	Thr	Ala	Val	Tyr	Tyr	Cys		
				85					90					95			
Ala	Arg	Asp	Lys	Ala	Val	Arg	Gly	Ile	Ser	Arg	Tyr	Asn	Tyr	Tyr	Met		
			100				105						110				
Asp	Val	Trp	Gly	Lys	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser					
		115					120					125					

<210> 7  
 <211> 318  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(318)

<400> 7  
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 Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg  
 1 5 10 15  
 gtc acc atc act tgc cgg gca agt cag aac att atc cgc tat tta aat 96  
 Val Thr Ile Thr Cys Arg Ala Ser Gln Asn Ile Ile Arg Tyr Leu Asn  
 20 25 30  
 tgg tat cag cag aag cca ggg aaa gcc cct agg ctc ctg atc tat ggt 144  
 Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Arg Leu Leu Ile Tyr Gly  
 35 40 45  
 gcg tcc act ttg caa agt ggg gtc cca tca agg ttc agt ggc agt gga 192  
 Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
 50 55 60  
 tct ggg aca gat ttc act ctc acc atc agt agt ctg caa cct gaa gat 240  
 Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp  
 65 70 75 80  
 ttt gca act tac tac tgt caa cag agt tac cgt acc cct cca ttc act 288  
 Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Arg Thr Pro Pro Phe Thr  
 85 90 95  
 ttc ggc cct ggg acc aaa gtg gag atc aaa 318  
 Phe Gly Pro Gly Thr Lys Val Glu Ile Lys  
 100 105

<210> 8  
 <211> 106  
 <212> PRT  
 <213> Homo sapiens

<400> 8  
 Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg  
 1 5 10 15  
 Val Thr Ile Thr Cys Arg Ala Ser Gln Asn Ile Ile Arg Tyr Leu Asn  
 20 25 30  
 Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Arg Leu Leu Ile Tyr Gly  
 35 40 45  
 Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
 50 55 60  
 Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp



Ser Leu Arg Leu Ser Cys Glu Ala Ser Gly Phe Thr Leu Arg Ser Ser  
                   20                  25                  30  
 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
                   35                  40                  45  
 Ala Leu Ile Trp Phe Asp Gly Ser Ile Arg Ser Tyr Ala Glu Ser Val  
                   50                  55                  60  
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Thr Ser Lys Asn Thr Leu Tyr  
                   65                  70                  75                  80  
 Leu Gln Met Arg Ser Leu Ser Ala Asp Asp Thr Ala Val Tyr Tyr Cys  
                   85                  90                  95  
 Ala Arg Asp Lys Ala Val Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Met  
                   100                  105                  110  
 Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser  
                   115                  120                  125

<210> 11  
 <211> 315  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(315)

<400> 11  
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 Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Ile Gly Asp Arg  
                   1                  5                  10                  15  
 gtc acc atc acc tgc cgg gca agt cag agt atc atc agg tat ttg aat 96  
 Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ile Arg Tyr Leu Asn  
                   20                  25                  30  
 tgg tat cag cac aaa cca gga aaa gcc cct aaa ctc ctc atc ttt gct 144  
 Trp Tyr Gln His Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Phe Ala  
                   35                  40                  45  
 gca tcg aat ttg caa act ggg gtc cca tcc agg ttc agt ggc agt gga 192  
 Ala Ser Asn Leu Gln Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
                   50                  55                  60  
 tct ggg aca gat ttc act ctc acc atc agt gac ctg cag cct gag gat 240  
 Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asp Leu Gln Pro Glu Asp  
                   65                  70                  75                  80  
 ttc gca act tac tac tgt caa cag agt tac agt agg ccg ttc act ttt 288  
 Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Arg Pro Phe Thr Phe  
                   85                  90                  95  
 ggc cgg ggg acc agc ctg gac atc aaa 315  
 Gly Arg Gly Thr Ser Leu Asp Ile Lys  
                   100                  105

<210> 12  
 <211> 105  
 <212> PRT  
 <213> Homo sapiens

<400> 12  
 Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Ile Gly Asp Arg  
   1                  5                  10                  15  
 Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ile Arg Tyr Leu Asn  
           20                  25                  30  
 Trp Tyr Gln His Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Phe Ala  
           35                  40                  45  
 Ala Ser Asn Leu Gln Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
           50                  55                  60  
 Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asp Leu Gln Pro Glu Asp  
           65                  70                  75                  80  
 Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Arg Pro Phe Thr Phe  
                   85                  90                  95  
 Gly Arg Gly Thr Ser Leu Asp Ile Lys  
                   100                  105

<210> 13  
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 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(375)

<400> 13  
 cag gtg aaa ctg ctc gag tct ggg gga ggc gtg gtc cag cct ggg agg 48  
 Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg  
   1                  5                  10                  15  
 tcc ctg aga ctc tcc tgt ata gcg tct gga ttc acc ctc agg aat tat 96  
 Ser Leu Arg Leu Ser Cys Ile Ala Ser Gly Phe Thr Leu Arg Asn Tyr  
           20                  25                  30  
 gcc atg cac tgg gtc cgc cag gct cca ggc aag ggg ctg gag tgg gtg 144  
 Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
           35                  40                  45  
 gca ggt ata tgg ttt gat gga agc aac aaa aac tat gca gac tcc gtg 192  
 Ala Gly Ile Trp Phe Asp Gly Ser Asn Lys Asn Tyr Ala Asp Ser Val  
           50                  55                  60  
 aag ggc cga ttc acc atc tcc aga gac aac tcc aag aac act ctg ttt 240  
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Phe  
           65                  70                  75                  80



ctg cac atg aac agc ctg aga gcc gag gac acg gct aca tat tac tgt	288
Leu His Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Tyr Cys	
85 90 95	

gcg aga gag agg gcg att cgg gga atc agt aga tac aat tac tac atg	336
Ala Arg Glu Arg Ala Ile Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Met	
100 105 110	

gac gtc tgg ggc aag ggg acc acg gtc acc gtc tcc tca	375
Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser	
115 120 125	

<210> 14  
 <211> 125  
 <212> PRT  
 <213> Homo sapiens

<400> 14	
Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg	
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Ser Leu Arg Leu Ser Cys Ile Ala Ser Gly Phe Thr Leu Arg Asn Tyr	
20 25 30	
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val	
35 40 45	
Ala Gly Ile Trp Phe Asp Gly Ser Asn Lys Asn Tyr Ala Asp Ser Val	
50 55 60	
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Phe	
65 70 75 80	
Leu His Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Thr Tyr Tyr Cys	
85 90 95	
Ala Arg Glu Arg Ala Ile Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Met	
100 105 110	
Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser	
115 120 125	

<210> 15  
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Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg	
1 5 10 15	

gtc acc atc act tgc cgg gca agt cag agc att cga agc tct tta aat	96
Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Arg Ser Ser Leu Asn	

	20	25	30	
tgg tat cag cag aaa cca ggg aaa gcc cct aaa gtc ctg atc tat gct				144
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Val Leu Ile Tyr Ala	35	40	45	
gca tcc agt ttg caa agt ggg gtc cca tcc agg ttc agt ggc aga gga				192
Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Arg Gly	50	55	60	
tct ggg aca gat ttc act ctc acc atc agc agt ctg cag cct gaa gat				240
Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp	65	70	75	80
ttt gcg act tat tat tgt caa cag agt tcc agt tcc tcg tgg acg ttc				288
Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Ser Ser Ser Ser Trp Thr Phe	85	90	95	
ggc caa ggg acc aag gtg gaa atc aaa				315
Gly Gln Gly Thr Lys Val Glu Ile Lys	100	105		

<210> 16  
 <211> 105  
 <212> PRT  
 <213> Homo sapiens

<400> 16	
Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg	
1 5 10 15	
Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Arg Ser Ser Leu Asn	
20 25 30	
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Val Leu Ile Tyr Ala	
35 40 45	
Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Arg Gly	
50 55 60	
Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp	
65 70 75 80	
Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Ser Ser Ser Trp Thr Phe	
85 90 95	
Gly Gln Gly Thr Lys Val Glu Ile Lys	
100 105	

<210> 17  
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 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1) .. (378)

<400> 17

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Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Lys  
1 5 10 15

tcc ctg aga ctt tcc tgt gca gcg tct gga ttc agt ttc aat agc cat 96  
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Asn Ser His  
20 25 30

ggc atg cac tgg gtc cgc cag gct cca ggc aag ggg ctg gag tgg gtg 144  
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

gca ttt ata tgg ttt gat ggc agt aat aaa tac tat gca gac tcc gtg 192  
Ala Phe Ile Trp Phe Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val  
50 55 60

aag ggc cga ttc acc atc acc aga gac aac tcc aag aac acg ctg tat 240  
Lys Gly Arg Phe Thr Ile Thr Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
65 70 75 80

ctg caa atg aac agc ctg aga gcc gag gac acg gct gtc tat tac tgt 288  
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

gcg aga gag acc tca gta agg cta ggg tat agc cgc tac aat tac tac 336  
Ala Arg Glu Thr Ser Val Arg Leu Gly Tyr Ser Arg Tyr Asn Tyr Tyr  
100 105 110

atg gac gtc tgg ggc aaa ggg acc acg gtc acc atc tcg tca 378  
Met Asp Val Trp Gly Lys Gly Thr Thr Val Thr Ile Ser Ser  
115 120 125

<210> 18

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<212> PRT

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Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Lys  
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Asn Ser His  
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Phe Ile Trp Phe Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val  
50 55 60

Lys Gly Arg Phe Thr Ile Thr Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Glu Thr Ser Val Arg Leu Gly Tyr Ser Arg Tyr Asn Tyr Tyr  
100 105 110

Met Asp Val Trp Gly Lys Gly Thr Thr Val Thr Ile Ser Ser  
 115 120 125

<210> 19  
 <211> 318  
 <212> DNA  
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<220>  
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 <222> (1)..(318)

<400> 19  
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 Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg  
 1 5 10 15  
 gtc acc atc act tgc cgg gca agt cag agc att agg agc cat ttg aat 96  
 Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Arg Ser His Leu Asn  
 20 25 30  
 tgg tat cag cag aaa cca ggg aaa gcc cct aag ctc ctg atc tat gct 144  
 Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala  
 35 40 45  
 gca tcc agt ttg caa ggt ggg gtc cca tca agg ttc agt ggc agt gga 192  
 Ala Ser Ser Leu Gln Gly Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
 50 55 60  
 tct ggg aca gat ttc act ctc acc atc agc agt ctg caa cct gaa gat 240  
 Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp  
 65 70 75 80  
 ttt gca act tat tac tgt caa cag agt tac agg gcc cct cag tgg acg 288  
 Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Arg Ala Pro Gln Trp Thr  
 85 90 95  
 ttc ggc caa ggg acc aag gtg gaa atc aaa 318  
 Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
 100 105

<210> 20  
 <211> 106  
 <212> PRT  
 <213> Homo sapiens

<400> 20  
 Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg  
 1 5 10 15  
 Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Arg Ser His Leu Asn  
 20 25 30  
 Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala  
 35 40 45  
 Ala Ser Ser Leu Gln Gly Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
 50 55 60

Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp  
65 70 75 80

Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Arg Ala Pro Gln Trp Thr  
85 90 95

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
100 105

<210> 21  
<211> 375  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(375)

<400> 21  
cag gtg aaa ctg ctc gag tct ggg gga ggc gtg gtc cag ccg ggg ggg 48  
Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly  
1 5 10 15

tcc ctg aga ctc tcc tgt gta gcg tct gga ttc acc ctc agg agt tat 96  
Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Leu Arg Ser Tyr  
20 25 30

ggc atg cac tgg gtc cgc cag gct cca ggc aag ggc ctg gag tgg gtg 144  
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

gct ttt ata tgg ttt gat gga agt aat aaa gga tat gta gac tcc gtg 192  
Ala Phe Ile Trp Phe Asp Gly Ser Asn Lys Gly Tyr Val Asp Ser Val  
50 55 60

aag ggc cga ttc acc atc tcc cga gac aat tcc aag aac atg gtc tat 240  
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Met Val Tyr  
65 70 75 80

ctg caa atg aac agc ctg aga gcc gat gac acg gct gta tat tat tgt 288  
Leu Gln Met Asn Ser Leu Arg Ala Asp Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

gcg aga gag aag gcg ctt cgg gga atc agc aga tac aac tat tac ctg 336  
Ala Arg Glu Lys Ala Leu Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Leu  
100 105 110

gac gtc tgg ggc aag ggg acc acg gtc acc gtc tcc tca 375  
Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser  
115 120 125

<210> 22  
<211> 125  
<212> PRT  
<213> Homo sapiens

<400> 22

Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly  
 1 5 10 15  
 Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Leu Arg Ser Tyr  
 20 25 30  
 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 Ala Phe Ile Trp Phe Asp Gly Ser Asn Lys Gly Tyr Val Asp Ser Val  
 50 55 60  
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Met Val Tyr  
 65 70 75 80  
 Leu Gln Met Asn Ser Leu Arg Ala Asp Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Glu Lys Ala Leu Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Leu  
 100 105 110  
 Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser  
 115 120 125

<210> 23  
 <211> 333  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(333)

<400> 23  
 gtg gtg act cag cca ccc tca gcg tct ggg acc ccc gga cag agg gtc 48  
 Val Val Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln Arg Val 15  
 1 5 10  
 acc atc tct tgt tct gga agc aac tcc atc ctt gga agt aag tat gta 96  
 Thr Ile Ser Cys Ser Gly Ser Asn Ser Ile Leu Gly Ser Lys Tyr Val 20 25 30  
 tac tgg tac cag aaa ctc cca gga acg gcc ccc aaa ctc ctc atc tat 144  
 Tyr Trp Tyr Gln Lys Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr 35 40 45  
 aag aat gat cag cgg ccc tca ggg gtc tct gac cga ttc tct ggc tcc 192  
 Lys Asn Asp Gln Arg Pro Ser Gly Val Ser Asp Arg Phe Ser Gly Ser 50 55 60  
 aag tct ggc acc tcg gcc tcc ctg gcc atc agt ggg ctc cgg tcc gag 240  
 Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Arg Ser Glu 65 70 75 80  
 gat gag gct gac tat tac tgt gca cca tgg gat gcc aac ctg ggt ggc 288  
 Asp Glu Ala Asp Tyr Tyr Cys Ala Pro Trp Asp Ala Asn Leu Gly Gly 85 90 95  
 ccg gtg ttc ggc gga ggg acc aag ctg acc gtc cta agt cag ccc 333

Pro Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gln Pro  
 100 105 110

<210> 24  
 <211> 111  
 <212> PRT  
 <213> Homo sapiens

<400> 24  
 Val Val Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln Arg Val  
 1 5 10 15  
 Thr Ile Ser Cys Ser Gly Ser Asn Ser Ile Leu Gly Ser Lys Tyr Val  
 20 25 30  
 Tyr Trp Tyr Gln Lys Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr  
 35 40 45  
 Lys Asn Asp Gln Arg Pro Ser Gly Val Ser Asp Arg Phe Ser Gly Ser  
 50 55 60  
 Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Arg Ser Glu  
 65 70 75 80  
 Asp Glu Ala Asp Tyr Tyr Cys Ala Pro Trp Asp Ala Asn Leu Gly Gly  
 85 90 95  
 Pro Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gln Pro  
 100 105 110

<210> 25  
 <211> 375  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(375)

<400> 25  
 cag gtg aaa ctg ctg gag tcg ggg gga ggc gtg gtc cag ccg ggg ggg 48  
 Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly  
 1 5 10 15  
 tcc ctg aga ctg tcc tgt gaa gcg tct gga ttc acc ctg aga agt tct 96  
 Ser Leu Arg Leu Ser Cys Glu Ala Ser Gly Phe Thr Leu Arg Ser Ser  
 20 25 30  
 ggc atg cac tgg gtc cgc cag gct cct ggc aag ggg ctg gag tgg gtg 144  
 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 gca ctt ata tgg ttt gat gga agt atc aga tcg tat gca gaa tcc gtg 192  
 Ala Leu Ile Trp Phe Asp Gly Ser Ile Arg Ser Tyr Ala Glu Ser Val  
 50 55 60  
 aag ggc cga ttc acc atc tcc aga gac act tcc aag aac acc cta tat 240  
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Thr Ser Lys Asn Thr Leu Tyr

65	70	75	80													
ctc	caa	atg	cgc	agt	ctg	agt	gcc	gac	gac	acg	gct	gtg	tat	tac	tgt	288
Leu	Gln	Met	Arg	Ser	Leu	Ser	Ala	Asp	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
				85					90						95	
gcg	aga	gac	aag	gcg	gtt	cgg	gga	att	agc	agg	tac	aac	tat	tac	atg	336
Ala	Arg	Asp	Lys	Ala	Val	Arg	Gly	Ile	Ser	Arg	Tyr	Asn	Tyr	Tyr	Met	
			100					105					110			
gac	gtc	tgg	ggc	aaa	ggg	acc	acg	gtc	acc	gtc	tcc	tca				375
Asp	Val	Trp	Gly	Lys	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser				
		115					120					125				

<210> 26  
 <211> 125  
 <212> PRT  
 <213> Homo sapiens

<400> 26																
Gln	Val	Lys	Leu	Leu	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Pro	Gly	Gly	
1				5					10					15		
Ser	Leu	Arg	Leu	Ser	Cys	Glu	Ala	Ser	Gly	Phe	Thr	Leu	Arg	Ser	Ser	
			20					25					30			
Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
		35					40					45				
Ala	Leu	Ile	Trp	Phe	Asp	Gly	Ser	Ile	Arg	Ser	Tyr	Ala	Glu	Ser	Val	
	50					55					60					
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Thr	Ser	Lys	Asn	Thr	Leu	Tyr	
65					70				75						80	
Leu	Gln	Met	Arg	Ser	Leu	Ser	Ala	Asp	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
				85					90					95		
Ala	Arg	Asp	Lys	Ala	Val	Arg	Gly	Ile	Ser	Arg	Tyr	Asn	Tyr	Tyr	Met	
			100					105					110			
Asp	Val	Trp	Gly	Lys	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser				
		115					120					125				

<210> 27  
 <211> 312  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(312)

<400> 27																
gtg	atg	acc	cag	tct	cca	tcc	tcc	ctg	tct	gca	tct	gta	gga	gac	aga	48
Val	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	Asp	Arg	
1					5				10					15		



gtc acc atc act tgc cgg aca agt cag acc att agc aga aat tta aat	96
Val Thr Ile Thr Cys Arg Thr Ser Gln Thr Ile Ser Arg Asn Leu Asn	
20 25 30	
tgg tat cag cag aaa cca ggg aaa gcc cct aag ctc ctg atc tat gct	144
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala	
35 40 45	
aca tcc agt ttg caa agt ggg gtc cca tca agg ttc agt ggc agt gga	192
Thr Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly	
50 55 60	
tct ggg aca gat ttc act ctc acc atc aat agt cta caa cct gaa gat	240
Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro Glu Asp	
65 70 75 80	
ttt gca act tac tac tgt caa cag agt tac act acc cct tcg ttc ggc	288
Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Thr Thr Pro Ser Phe Gly	
85 90 95	
caa ggg acc aag gtg gaa atc aaa	312
Gln Gly Thr Lys Val Glu Ile Lys	
100	

<210> 28  
 <211> 104  
 <212> PRT  
 <213> Homo sapiens

<400> 28	
Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg	
1 5 10 15	
Val Thr Ile Thr Cys Arg Thr Ser Gln Thr Ile Ser Arg Asn Leu Asn	
20 25 30	
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala	
35 40 45	
Thr Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly	
50 55 60	
Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro Glu Asp	
65 70 75 80	
Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Thr Thr Pro Ser Phe Gly	
85 90 95	
Gln Gly Thr Lys Val Glu Ile Lys	
100	

<210> 29  
 <211> 375  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS

<222> (1) .. (375)

<400> 29

cag	gtg	aaa	ctg	ctc	gag	tct	ggg	gga	ggc	ttg	gtc	cag	ccg	ggg	ggg	48
Gln	Val	Lys	Leu	Leu	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	
1				5					10					15		
tcc	ctg	aga	ctc	tcc	tgt	gta	gcg	tct	gga	ttc	acc	ttc	agg	agt	tat	96
Ser	Leu	Arg	Leu	Ser	Cys	Val	Ala	Ser	Gly	Phe	Thr	Phe	Arg	Ser	Tyr	
			20					25					30			
ggc	atg	cac	tgg	gtc	cg	cag	gct	cca	ggc	aag	ggc	ctg	gag	tgg	gtg	144
Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
		35					40					45				
gct	ttt	ata	tgg	ttt	gat	gga	agt	aat	aaa	gga	tat	gta	gac	tcc	gtg	192
Ala	Phe	Ile	Trp	Phe	Asp	Gly	Ser	Asn	Lys	Gly	Tyr	Val	Asp	Ser	Val	
		50				55					60					
aag	ggc	cga	ttc	acc	atc	tcc	cga	gac	aat	tcc	aag	aac	atg	ctc	tat	240
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Met	Leu	Tyr	
	65				70					75				80		
ctg	caa	atg	aat	agc	ctg	aga	gcc	gag	gac	acg	gct	gta	tat	tat	tgt	288
Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
				85					90					95		
gcg	aga	gag	aag	gcg	ctt	cgg	gga	atc	agt	aga	tac	aac	tat	tac	ctg	336
Ala	Arg	Glu	Lys	Ala	Leu	Arg	Gly	Ile	Ser	Arg	Tyr	Asn	Tyr	Tyr	Leu	
			100					105					110			
gac	gtc	tgg	ggc	aag	ggg	gcc	acg	gtc	acc	gtc	tcc	tca				375
Asp	Val	Trp	Gly	Lys	Gly	Ala	Thr	Val	Thr	Val	Ser	Ser				
		115					120					125				

<210> 30

<211> 125

<212> PRT

<213> Homo sapiens

<400> 30

Gln	Val	Lys	Leu	Leu	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	
1				5					10					15		
Ser	Leu	Arg	Leu	Ser	Cys	Val	Ala	Ser	Gly	Phe	Thr	Phe	Arg	Ser	Tyr	
			20					25					30			
Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
		35					40					45				
Ala	Phe	Ile	Trp	Phe	Asp	Gly	Ser	Asn	Lys	Gly	Tyr	Val	Asp	Ser	Val	
		50				55					60					
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Met	Leu	Tyr	
	65				70					75				80		
Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
				85					90					95		
Ala	Arg	Glu	Lys	Ala	Leu	Arg	Gly	Ile	Ser	Arg	Tyr	Asn	Tyr	Tyr	Leu	



Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
50 55 60

Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp  
65 70 75 80

Phe Gly Thr Tyr Tyr Cys Gln Gln Asn Tyr Arg Thr Pro Gln Trp Thr  
85 90 95

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
100 105

<210> 33  
<211> 378  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(378)

<400> 33  
cag gtg aaa ctg ctc gag tct ggg gga ggc gtg gtc cag ccg ggg ggg 48  
Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly  
1 5 10 15

tcc ctg aga ctc tcc tgt gta gcg tct gga ttc acc ctc agg agt tat 96  
Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Leu Arg Ser Tyr  
20 25 30

ggc atg cac tgg gtc cgc cag gct cca ggc aag ggc ctg gag tgg gtg 144  
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

gct ttt ata tgg ttt gat gga agt aat aaa gga tat gta gac tcc gtg 192  
Ala Phe Ile Trp Phe Asp Gly Ser Asn Lys Gly Tyr Val Asp Ser Val  
50 55 60

aag ggc cga ttc acc atc tcc cga gac aat tcc aag aac atg gtc tat 240  
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Met Val Tyr  
65 70 75 80

ctg caa atg aac agc ctg aga gcc gat gac acg gct gta tat tat tat 288  
Leu Gln Met Asn Ser Leu Arg Ala Asp Asp Thr Ala Val Tyr Tyr Tyr  
85 90 95

tgt gcg aga gag aag gcg ctt cgg gga atc agc aga tac aac tat tac 336  
Cys Ala Arg Glu Lys Ala Leu Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr  
100 105 110

ctg gac gtc tgg ggc aag ggg acc acg gtc acc gtc tcc tca 378  
Leu Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser  
115 120 125

<210> 34  
<211> 126  
<212> PRT  
<213> Homo sapiens

<400> 34

Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly  
1 5 10 15  
Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Leu Arg Ser Tyr  
20 25 30  
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45  
Ala Phe Ile Trp Phe Asp Gly Ser Asn Lys Gly Tyr Val Asp Ser Val  
50 55 60  
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Met Val Tyr  
65 70 75 80  
Leu Gln Met Asn Ser Leu Arg Ala Asp Asp Thr Ala Val Tyr Tyr Tyr  
85 90 95  
Cys Ala Arg Glu Lys Ala Leu Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr  
100 105 110  
Leu Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser  
115 120 125

<210> 35

<211> 333

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(333)

<400> 35

gtg gtg act cag gag ccc tca ctg act gtg tcc cca gga ggg aca gtc 48  
Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val  
1 5 10 15  
act ctc acc tgt gct tcc agc act ggg gca gtc acc agg ggt tac tat 96  
Thr Leu Thr Cys Ala Ser Ser Thr Gly Ala Val Thr Arg Gly Tyr Tyr  
20 25 30  
cca aac tgg ttc cag cag aag cct gga caa gca ccc agg gca ctg att 144  
Pro Asn Trp Phe Gln Gln Lys Pro Gly Gln Ala Pro Arg Ala Leu Ile  
35 40 45  
tat agt aca aac aaa aaa cac tcc tgg acc cct gcc cgg ttc tca ggc 192  
Tyr Ser Thr Asn Lys Lys His Ser Trp Thr Pro Ala Arg Phe Ser Gly  
50 55 60  
tcc ctc ctt ggg ggc aaa gct gcc ctg aca ctg tca ggt gtg cag cct 240  
Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro  
65 70 75 80  
gaa gac gag gct gaa tat tac tgc ctg ctc tac tat ggt ggt gct caa 288  
Glu Asp Glu Ala Glu Tyr Tyr Cys Leu Leu Tyr Tyr Gly Gly Ala Gln  
85 90 95

ctc	gta	ttc	ggc	gga	ggg	acc	aag	ctg	acc	gtc	cta	cgt	cag	ccc
Leu	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu	Arg	Gln	Pro
			100					105					110	

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<210> 36
<211> 111
<212> PRT
<213> Homo sapiens
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<400>	36															
Val	Val	Thr	Gln	Glu	Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	
1				5					10					15		
Thr	Leu	Thr	Cys	Ala	Ser	Ser	Thr	Gly	Ala	Val	Thr	Arg	Gly	Tyr	Tyr	
			20					25					30			
Pro	Asn	Trp	Phe	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Ala	Leu	Ile	
		35					40					45				
Tyr	Ser	Thr	Asn	Lys	Lys	His	Ser	Trp	Thr	Pro	Ala	Arg	Phe	Ser	Gly	
	50					55					60					
Ser	Leu	Leu	Gly	Gly	Lys	Ala	Ala	Leu	Thr	Leu	Ser	Gly	Val	Gln	Pro	
65					70					75					80	
Glu	Asp	Glu	Ala	Glu	Tyr	Tyr	Cys	Leu	Leu	Tyr	Tyr	Gly	Gly	Ala	Gln	
				85					90					95		
Leu	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu	Arg	Gln	Pro		
			100					105					110			

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<210> 37
<211> 375
<212> DNA
<213> Homo sapiens
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<220>  
<221> CDS  
<222> (1) .. (375)
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<400> 37																	
cag	gtg	aaa	ctg	ctc	gag	tcg	ggg	gga	ggc	gtg	gtc	cag	ccg	ggg	ggg		48
Gln	Val	Lys	Leu	Leu	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Pro	Gly	Gly		
1				5					10					15			
tcc	ctg	aga	ctc	tcc	tgt	gaa	gcg	tct	gga	ttc	acc	ctc	aga	agt	tct		96
Ser	Leu	Arg	Leu	Ser	Cys	Glu	Ala	Ser	Gly	Phe	Thr	Leu	Arg	Ser	Ser		
			20					25					30				
ggc	atg	cac	tgg	gtc	cgc	cag	gct	cct	ggc	aag	ggg	ctg	gag	tgg	gtg		144
Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val		
		35				40						45					
gca	ctt	ata	tgg	ttt	gat	gga	agt	atc	aga	tcg	tat	gca	gaa	tcc	gtg		192
Ala	Leu	Ile	Trp	Phe	Asp	Gly	Ser	Ile	Arg	Ser	Tyr	Ala	Glu	Ser	Val		
	50					55					60						

aag ggc cga ttc acc atc tcc aga gac act tcc aag aac acc cta tat 240  
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Thr Ser Lys Asn Thr Leu Tyr  
 65 70 75 80

ctc caa atg cgc agt ctg agt gcc gac gac acg gct gtg tat tac tgt 288  
 Leu Gln Met Arg Ser Leu Ser Ala Asp Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

gcg aga gac aag gcg gtt cgg gga att agc agg tac aac tat tac atg 336  
 Ala Arg Asp Lys Ala Val Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Met  
 100 105 110

gac gtc tgg ggc aaa ggg acc acg gtc acc gtc tcc tca 375  
 Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser  
 115 120 125

<210> 38  
 <211> 125  
 <212> PRT  
 <213> Homo sapiens

<400> 38  
 Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly  
 1 5 10 15

Ser Leu Arg Leu Ser Cys Glu Ala Ser Gly Phe Thr Leu Arg Ser Ser  
 20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45

Ala Leu Ile Trp Phe Asp Gly Ser Ile Arg Ser Tyr Ala Glu Ser Val  
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Thr Ser Lys Asn Thr Leu Tyr  
 65 70 75 80

Leu Gln Met Arg Ser Leu Ser Ala Asp Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Asp Lys Ala Val Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Met  
 100 105 110

Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser  
 115 120 125

<210> 39  
 <211> 315  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(315)

<400> 39  
 gtg ttg acc cag tct cca tcc tcc ctg tct gca tct ata cga gac aga 48  
 Val Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Ile Arg Asp Arg

1	5	10	15	
gtc acc atc act tgc cgg gca agt cag aac att ggc agt tat tta aat	96			
Val Thr Ile Thr Cys Arg Ala Ser Gln Asn Ile Gly Ser Tyr Leu Asn				
20 25 30				
tgg tat cag cac aaa cca ggg aca gcc cct aaa ctc ctg atc tat gct	144			
Trp Tyr Gln His Lys Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Ala				
35 40 45				
gta tcc gct ttg caa agt ggg gtc cca tcg agg ttc agt ggc agt aga	192			
Val Ser Ala Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Arg				
50 55 60				
tct ggg aca gat ttc act ctc acc atc agc agt ctg caa cct gaa gat	240			
Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp				
65 70 75 80				
ttt gca act tac tac tgt caa cag agt tac agt ccc ccg tac act ttc	288			
Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Pro Pro Tyr Thr Phe				
85 90 95				
ggc cag ggg acc aac ctg cag atc aaa	315			
Gly Gln Gly Thr Asn Leu Gln Ile Lys				
100 105				

<210> 40  
 <211> 105  
 <212> PRT  
 <213> Homo sapiens

<400> 40
Val Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Ile Arg Asp Arg
1 5 10 15
Val Thr Ile Thr Cys Arg Ala Ser Gln Asn Ile Gly Ser Tyr Leu Asn
20 25 30
Trp Tyr Gln His Lys Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Ala
35 40 45
Val Ser Ala Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Arg
50 55 60
Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp
65 70 75 80
Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Pro Pro Tyr Thr Phe
85 90 95
Gly Gln Gly Thr Asn Leu Gln Ile Lys
100 105

<210> 41  
 <211> 375  
 <212> DNA  
 <213> Homo sapiens



<220>  
<221> CDS  
<222> (1)..(375)

<400> 41

cag	gtg	aaa	ctg	ctc	gag	tct	ggg	gga	ggc	gtg	gtc	cag	ccg	ggg	ggg	48
Gln	Val	Lys	Leu	Leu	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Pro	Gly	Gly	
1				5					10					15		
tcc	ctg	aga	gtc	gcc	tgt	gta	gcg	tct	gga	ttc	acc	ttc	agg	aat	ttt	96
Ser	Leu	Arg	Val	Ala	Cys	Val	Ala	Ser	Gly	Phe	Thr	Phe	Arg	Asn	Phe	
			20					25					30			
ggc	atg	cac	tgg	gtc	cgc	cag	gct	cca	ggc	aag	ggg	ctg	gag	tgg	gtg	144
Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
		35					40					45				
gct	ttt	att	tgg	ttt	gat	gca	agt	aat	aaa	gga	tat	gga	gac	tcc	gtt	192
Ala	Phe	Ile	Trp	Phe	Asp	Ala	Ser	Asn	Lys	Gly	Tyr	Gly	Asp	Ser	Val	
	50					55					60					
aag	ggc	cga	ttc	acc	gtc	tcc	aga	gac	aat	tcc	aag	aac	acg	ctc	tat	240
Lys	Gly	Arg	Phe	Thr	Val	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Thr	Leu	Tyr	
65					70					75					80	
ctg	caa	atg	aac	ggc	ctg	aga	gcc	gaa	gac	acg	gct	gta	tat	tat	tgt	288
Leu	Gln	Met	Asn	Gly	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
				85				90					95			
gcg	aga	gag	aag	gcg	gtt	cgg	gga	att	agt	aga	tac	aac	tac	tac	atg	336
Ala	Arg	Glu	Lys	Ala	Val	Arg	Gly	Ile	Ser	Arg	Tyr	Asn	Tyr	Tyr	Met	
			100					105					110			
gac	gtc	tgg	ggc	aag	ggg	acc	acg	gtc	acc	gtc	tcc	tca				375
Asp	Val	Trp	Gly	Lys	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser				
		115					120					125				

<210> 42  
<211> 125  
<212> PRT  
<213> Homo sapiens

<400> 42

Gln	Val	Lys	Leu	Leu	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Pro	Gly	Gly	
1				5					10					15		
Ser	Leu	Arg	Val	Ala	Cys	Val	Ala	Ser	Gly	Phe	Thr	Phe	Arg	Asn	Phe	
			20					25					30			
Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
		35					40					45				
Ala	Phe	Ile	Trp	Phe	Asp	Ala	Ser	Asn	Lys	Gly	Tyr	Gly	Asp	Ser	Val	
	50					55					60					
Lys	Gly	Arg	Phe	Thr	Val	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Thr	Leu	Tyr	
65					70					75					80	
Leu	Gln	Met	Asn	Gly	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
				85				90						95		

Ala Arg Glu Lys Ala Val Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Met  
 100 105 110

Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser  
 115 120 125

<210> 43  
 <211> 315  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(315)

<400> 43  
 gtg atg acc cag tct cca tcc tcc ctg tct gca tct gtg gga gac aga 48  
 Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg  
 1 5 10 15  
 gtc acc atc act tgc cgg gca agt cag agc att atc aac aat tta aat 96  
 Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ile Asn Asn Leu Asn  
 20 25 30  
 tgg tat cag cag aaa cca ggc aaa gcc cct gaa ctc ctg atc tat gct 144  
 Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Glu Leu Leu Ile Tyr Ala  
 35 40 45  
 gca tcc agt ttg caa agt ggg gtc cct tca agg ttc cgt ggc agt gga 192  
 Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Arg Gly Ser Gly  
 50 55 60  
 tct ggg aga gat ttc act ctc acc gtc acc agt ctg caa cct gaa gat 240  
 Ser Gly Arg Asp Phe Thr Leu Thr Val Thr Ser Leu Gln Pro Glu Asp  
 65 70 75 80  
 ttt gca act tac tac tgt caa cag agt tac agt acc ctg tgg acg ttc 288  
 Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Leu Trp Thr Phe  
 85 90 95  
 ggc caa ggg acc aag gtg gaa atc aaa 315  
 Gly Gln Gly Thr Lys Val Glu Ile Lys  
 100 105

<210> 44  
 <211> 105  
 <212> PRT  
 <213> Homo sapiens

<400> 44  
 Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg  
 1 5 10 15  
 Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ile Asn Asn Leu Asn  
 20 25 30  
 Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Glu Leu Leu Ile Tyr Ala

35	40	45
Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Arg Gly Ser Gly		
50	55	60
Ser Gly Arg Asp Phe Thr Leu Thr Val Thr Ser Leu Gln Pro Glu Asp		
65	70	75
Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Leu Trp Thr Phe		
	85	90
Gly Gln Gly Thr Lys Val Glu Ile Lys		
	100	105

<210> 45  
 <211> 375  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1) .. (375)

<400> 45	
cag gtg aaa ctg ctc gag tct ggg gga ggc gtg gtc cag ccg ggg ggg	48
Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly	
1 5 10 15	
tcc ctg aga ctc tcc tgt gta gcg tct gga ttc acc ttc agg agt tat	96
Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Arg Ser Tyr	
20 25 30	
ggc atg cac tgg gtc cgc cag gct cca ggc aag ggc ctg gag tgg gtg	144
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val	
35 40 45	
gct ttt ata tgg ttt gat gga agt aat aaa gga tat gta gac tcc gtg	192
Ala Phe Ile Trp Phe Asp Gly Ser Asn Lys Gly Tyr Val Asp Ser Val	
50 55 60	
aag ggc cga ttc acc atc tcc cga gac aat tcc aag aac acg ctc tat	240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr	
65 70 75 80	
ctg caa atg aag agc ctg aga gcc gag gac acg gct gta tat tat tgt	288
Leu Gln Met Lys Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys	
85 90 95	
gcg aga gag aag gcg ctt cgg gga atc agt aga tac aac tat tac ctg	336
Ala Arg Glu Lys Ala Leu Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Leu	
100 105 110	
gac gtc tgg ggc aag ggg acc acg gtc acc gtc tcc tca	375
Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser	
115 120 125	

<210> 46  
 <211> 125

<212> PRT

<213> Homo sapiens

<400> 46

Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly  
1 5 10 15  
Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Arg Ser Tyr  
20 25 30  
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45  
Ala Phe Ile Trp Phe Asp Gly Ser Asn Lys Gly Tyr Val Asp Ser Val  
50 55 60  
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
65 70 75 80  
Leu Gln Met Lys Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95  
Ala Arg Glu Lys Ala Leu Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Leu  
100 105 110  
Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser  
115 120 125

<210> 47

<211> 315

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(315)

<400> 47

gtg atg acc cag tct cca ttc tcc ctg tct gca tct gta gga gac aga 48  
Val Met Thr Gln Ser Pro Phe Ser Leu Ser Ala Ser Val Gly Asp Arg  
1 5 10 15  
gtc acc atc act tgc cgg gca agt cag aac att agg agt ttt tta agt 96  
Val Thr Ile Thr Cys Arg Ala Ser Gln Asn Ile Arg Ser Phe Leu Ser  
20 25 30  
tgg tat cag cag aaa cca ggg aca gcc cct aag ctg ctg atc tat gct 144  
Trp Tyr Gln Gln Lys Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Ala  
35 40 45  
gca tcc agg ttg caa agt ggg gtc cca tca agg ttc agt ggc agt ggg 192  
Ala Ser Arg Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
50 55 60  
tct ggg aca gat ttc act ctc acc atc agc act ctg caa cct gaa gat 240  
Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Thr Leu Gln Pro Glu Asp  
65 70 75 80  
ttt gcg act tac tac tgt caa cag agt tac agt gcc cct tgg acg ttc 288

Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Ala Pro Trp Thr Phe  
85 90 95

ggc caa ggg acc aag ctg gaa atc aaa  
Gly Gln Gly Thr Lys Leu Glu Ile Lys  
100 105

315

<210> 48  
<211> 105  
<212> PRT  
<213> Homo sapiens

<400> 48  
Val Met Thr Gln Ser Pro Phe Ser Leu Ser Ala Ser Val Gly Asp Arg  
1 5 10 15  
Val Thr Ile Thr Cys Arg Ala Ser Gln Asn Ile Arg Ser Phe Leu Ser  
20 25 30  
Trp Tyr Gln Gln Lys Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Ala  
35 40 45  
Ala Ser Arg Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
50 55 60  
Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Thr Leu Gln Pro Glu Asp  
65 70 75 80  
Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Ala Pro Trp Thr Phe  
85 90 95  
Gly Gln Gly Thr Lys Leu Glu Ile Lys  
100 105

<210> 49  
<211> 375  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(375)

<400> 49  
cag gtg aaa ctg ctc gag tct ggg gga ggc gtg gtc cag ccg ggg ggg 48  
Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly  
1 5 10 15  
tcc ctg aga ctc tcc tgt gta gcg tct gga ttc acc tcc agg agt tat 96  
Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Ser Arg Ser Tyr  
20 25 30  
ggc atg cac tgg gtc cgc cag gct cca ggc aag ggc ctg gag tgg gtg 144  
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45  
gct ttt ata tgg ttt gat gga agt aat aaa gga tat gta gac tcc gtg 192  
Ala Phe Ile Trp Phe Asp Gly Ser Asn Lys Gly Tyr Val Asp Ser Val

50	55	60	
aag ggc cga ttc acc atc tcc cga gac aat tcc aag aac acg ctc tat			240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr			
65	70	75	80
ctg caa atg aag agc ctg aga gcc gag gac acg gct gta tat tat tgt			288
Leu Gln Met Lys Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys			
	85	90	95
gcg aga gag aag gcg ctt cgg gga atc agt aga tac aac tat tac ctg			336
Ala Arg Glu Lys Ala Leu Arg Gly Ile Ser Arg Tyr Asn Tyr Leu			
	100	105	110
gac gtc tgg ggc aag ggg acc acg gtc acc gtc tcc tca			375
Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser			
	115	120	125

<210> 50  
 <211> 125  
 <212> PRT  
 <213> Homo sapiens

<400> 50	
Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly	
1	5 10 15
Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Ser Arg Ser Tyr	
	20 25 30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val	
	35 40 45
Ala Phe Ile Trp Phe Asp Gly Ser Asn Lys Gly Tyr Val Asp Ser Val	
	50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr	
	65 70 75 80
Leu Gln Met Lys Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys	
	85 90 95
Ala Arg Glu Lys Ala Leu Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Leu	
	100 105 110
Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser	
	115 120 125

<210> 51  
 <211> 315  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(315)  
 <400> 51

gtg	atg	acc	cag	tct	cca	tcc	tcc	ctg	tct	gca	tct	gta	gga	gac	aga	48
Val	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	Asp	Arg	
1				5				10						15		
gtc	acc	atc	act	tgc	cgg	gca	agt	cag	agc	att	agc	agc	tat	tta	aat	96
Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Ser	Ile	Ser	Ser	Tyr	Leu	Asn	
			20					25					30			
tgg	tat	cag	cag	aaa	cca	ggg	aaa	gcc	cct	aag	ctc	ctg	atc	tat	gct	144
Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Leu	Leu	Ile	Tyr	Ala	
		35					40					45				
gca	tcc	agt	ttg	caa	agt	ggg	gtc	cca	tca	agg	ttc	agt	ggc	agt	gga	192
Ala	Ser	Ser	Leu	Gln	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	Ser	Gly	
	50					55					60					
tct	ggg	aca	gat	ttc	act	ctc	acc	atc	agc	agt	ctg	caa	cct	gaa	gat	240
Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp	
65					70				75					80		
ttt	gca	act	tac	tac	tgt	caa	cag	agt	tac	agt	acc	cga	ttc	act	ttc	288
Phe	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Ser	Tyr	Ser	Thr	Arg	Phe	Thr	Phe	
				85					90					95		
ggc	cct	ggg	acc	aaa	gtg	gat	atc	aaa								315
Gly	Pro	Gly	Thr	Lys	Val	Asp	Ile	Lys								
			100					105								

<210> 52  
 <211> 105  
 <212> PRT  
 <213> Homo sapiens

<400> 52																
Val	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	Asp	Arg	
1				5				10						15		
Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Ser	Ile	Ser	Ser	Tyr	Leu	Asn	
			20					25					30			
Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Leu	Leu	Ile	Tyr	Ala	
		35					40					45				
Ala	Ser	Ser	Leu	Gln	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	Ser	Gly	
	50					55					60					
Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp	
65					70				75					80		
Phe	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Ser	Tyr	Ser	Thr	Arg	Phe	Thr	Phe	
				85					90					95		
Gly	Pro	Gly	Thr	Lys	Val	Asp	Ile	Lys								
			100					105								

<210> 53  
 <211> 384  
 <212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(384)

<400> 53

cag	gtg	aaa	ctg	ctc	gag	tct	ggg	gga	ggc	gtg	gtc	cag	cct	ggg	agg	48
Gln	Val	Lys	Leu	Leu	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Pro	Gly	Arg	
1				5					10					15		
tcc	ctg	aga	ctt	tcc	tgt	gca	gcg	tct	gga	ttt	acc	ttc	agt	agc	tat	96
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Ser	Tyr	
			20					25					30			
ggc	atg	cac	tgg	gtc	cgc	cag	gct	cca	ggc	aag	ggg	ctg	gag	tgg	gtg	144
Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
		35					40					45				
gca	gat	ata	tgg	ttt	gat	gga	ggg	aat	aaa	cat	tat	gca	gac	ttc	gtg	192
Ala	Asp	Ile	Trp	Phe	Asp	Gly	Gly	Asn	Lys	His	Tyr	Ala	Asp	Phe	Val	
	50					55					60					
aag	ggc	cga	ttc	acc	atc	tcc	aga	gac	aat	tcc	aag	aac	acg	gtg	tat	240
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Thr	Val	Tyr	
	65				70					75					80	
cta	caa	atg	aac	agc	ctg	aga	gtc	gag	gac	acg	gct	gtg	tat	tac	tgt	288
Leu	Gln	Met	Asn	Ser	Leu	Arg	Val	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
				85					90					95		
gcg	agg	gat	tac	tat	agc	gtt	act	aag	aaa	ctc	aga	ctc	cac	tac	tac	336
Ala	Arg	Asp	Tyr	Tyr	Ser	Val	Thr	Lys	Lys	Leu	Arg	Leu	His	Tyr	Tyr	
			100					105					110			
tac	tac	atg	gac	gtc	tgg	ggc	aaa	ggg	acc	acg	gtc	acc	gtc	tcc	tca	384
Tyr	Tyr	Met	Asp	Val	Trp	Gly	Lys	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser	
		115					120					125				

<210> 54

<211> 128

<212> PRT

<213> Homo sapiens

<400> 54

Gln	Val	Lys	Leu	Leu	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Pro	Gly	Arg
1				5					10					15	
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Ser	Tyr
			20					25					30		
Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val
		35					40					45			
Ala	Asp	Ile	Trp	Phe	Asp	Gly	Gly	Asn	Lys	His	Tyr	Ala	Asp	Phe	Val
	50					55					60				
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Thr	Val	Tyr
	65				70					75					80



Leu Gln Met Asn Ser Leu Arg Val Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Asp Tyr Tyr Ser Val Thr Lys Lys Leu Arg Leu His Tyr Tyr  
100 105 110

Tyr Tyr Met Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser  
115 120 125

<210> 55  
<211> 315  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(315)

<400> 55  
gtg atg acc cag tct cca tcc tcc ctg tct gca tct gta gga gac aga 48  
Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg  
1 5 10 15  
gtc acc atc act tgc cgg gca agt cag ggc att aga aat gat tta acc 96  
Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Asn Asp Leu Thr  
20 25 30  
tgg tat cag caa aaa cca ggg aaa gcc cct aag ctc ctg atc tat gct 144  
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala  
35 40 45  
gca tcc aat tta caa agt ggg gtc cca tca agg ttc agc ggc agt gga 192  
Ala Ser Asn Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
50 55 60  
tct ggc aca gat ttc act ctc acc atc agc agc ctg cag cct gaa gat 240  
Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp  
65 70 75 80  
ttt gca act tat tac tgt cta caa gat aac aat ttc ccg tac act ttt 288  
Phe Ala Thr Tyr Tyr Cys Leu Gln Asp Asn Asn Phe Pro Tyr Thr Phe  
85 90 95  
ggc cag ggg acc aag ctg gag atc aaa 315  
Gly Gln Gly Thr Lys Leu Glu Ile Lys  
100 105

<210> 56  
<211> 105  
<212> PRT  
<213> Homo sapiens

<400> 56  
Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg  
1 5 10 15  
Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Asn Asp Leu Thr  
20 25 30

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala  
 35 40 45  
 Ala Ser Asn Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
 50 55 60  
 Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp  
 65 70 75 80  
 Phe Ala Thr Tyr Tyr Cys Leu Gln Asp Asn Asn Phe Pro Tyr Thr Phe  
 85 90 95  
 Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 100 105

<210> 57  
 <211> 375  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(375)

<400> 57  
 cag gtg aaa ctg ctc gag tct ggg gga ggc gtg gtc cag ccg ggg ggg 48  
 Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly  
 1 5 10 15  
 tcc ctg aga gtc gcc tgt gta gcg tct gga ttc acc ttc agg aat ttt 96  
 Ser Leu Arg Val Ala Cys Val Ala Ser Gly Phe Thr Phe Arg Asn Phe  
 20 25 30  
 ggc atg cac tgg gtc cgc cag gct cca ggc aag ggg ctg gag tgg gtg 144  
 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 gct ttt att tgg ttt gat gca agt aat aaa gga tat gga gac tcc gtt 192  
 Ala Phe Ile Trp Phe Asp Ala Ser Asn Lys Gly Tyr Gly Asp Ser Val  
 50 55 60  
 aag ggc cga ttc acc gtc tcc aga gac aat tcc aag aac acg ctc tat 240  
 Lys Gly Arg Phe Thr Val Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
 65 70 75 80  
 ctg caa atg aac ggc ctg aga gcc gaa gac acg gct gta tat tat tgt 288  
 Leu Gln Met Asn Gly Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 gcg aga gag aag gcg gtt cgg gga att agt aga tac aac tac tac atg 336  
 Ala Arg Glu Lys Ala Val Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Met  
 100 105 110  
 gac gtc tgg ggc aag ggg acc acg gtc acc gtc tcc tca 375  
 Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser  
 115 120 125

<210> 58  
 <211> 125  
 <212> PRT  
 <213> Homo sapiens

<400> 58  
 Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly  
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 Ser Leu Arg Val Ala Cys Val Ala Ser Gly Phe Thr Phe Arg Asn Phe  
 20 25 30  
 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 Ala Phe Ile Trp Phe Asp Ala Ser Asn Lys Gly Tyr Gly Asp Ser Val  
 50 55 60  
 Lys Gly Arg Phe Thr Val Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
 65 70 75 80  
 Leu Gln Met Asn Gly Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Glu Lys Ala Val Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Met  
 100 105 110  
 Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser  
 115 120 125

<210> 59  
 <211> 315  
 <212> DNA  
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<220>  
 <221> CDS  
 <222> (1)..(315)

<400> 59  
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 Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg  
 1 5 10 15  
 gtc acc atc act tgc cgg gca agt cag agc att atc aga tat tta aat 96  
 Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ile Arg Tyr Leu Asn  
 20 25 30  
 tgg tat cag cac aaa cca ggg aaa gcc cct aag ctc ctg atc cat act 144  
 Trp Tyr Gln His Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile His Thr  
 35 40 45  
 gca tcc agt ttg caa agt ggg gtc ccg tca agg ttc agt ggc agt gta 192  
 Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Val  
 50 55 60  
 tct ggg aca gat ttc act ctc acc atc agc agt ctg caa cct gaa gat 240  
 Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp  
 65 70 75 80

ttt gca act tac tac tgt caa cag agt tac act acc ccg tac act ttt 288  
 Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Thr Thr Pro Tyr Thr Phe  
                     85                    90                    95

ggc cag ggg acc aag ctg cag atc aaa 315  
 Gly Gln Gly Thr Lys Leu Gln Ile Lys  
                     100                    105

<210> 60  
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 Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ile Arg Tyr Leu Asn  
                     20                    25                    30  
 Trp Tyr Gln His Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile His Thr  
                     35                    40                    45  
 Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Val  
                     50                    55                    60  
 Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp  
   65                    70                    75                    80  
 Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Thr Thr Pro Tyr Thr Phe  
                     85                    90                    95  
 Gly Gln Gly Thr Lys Leu Gln Ile Lys  
                     100                    105

<210> 61  
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 <222> (1)..(375)

<400> 61  
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 Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly  
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 tcc ctg aga gtc gcc tgt gta gcg tct gga ttc acc ttc agg aat ttt 96  
 Ser Leu Arg Val Ala Cys Val Ala Ser Gly Phe Thr Phe Arg Asn Phe  
                     20                    25                    30  
 ggc atg cac tgg gtc cgc cag gct cca ggc aag ggg ctg gag tgg gtg 144  
 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
                     35                    40                    45

gct ttt att tgg ttt gat gca agt aat aaa gga tat gga gac tcc gtt	192
Ala Phe Ile Trp Phe Asp Ala Ser Asn Lys Gly Tyr Gly Asp Ser Val	
50 55 60	
aag ggc cga ttc acc gtc tcc aga gac aat tcc aag aac acg ctc tat	240
Lys Gly Arg Phe Thr Val Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr	
65 70 75 80	
ctg caa atg aac ggc ctg aga gcc gaa gac acg gct gta tat tat tgt	288
Leu Gln Met Asn Gly Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys	
85 90 95	
gcg aga gag aag gcg gtt cgg gga att agt aga tac aac tac tac atg	336
Ala Arg Glu Lys Ala Val Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Met	
100 105 110	
gac gtc tgg ggc aag ggg acc acg gtc acc gtc tcc tca	375
Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser	
115 120 125	

<210> 62  
 <211> 125  
 <212> PRT  
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<400> 62	
Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly	
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20 25 30	
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val	
35 40 45	
Ala Phe Ile Trp Phe Asp Ala Ser Asn Lys Gly Tyr Gly Asp Ser Val	
50 55 60	
Lys Gly Arg Phe Thr Val Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr	
65 70 75 80	
Leu Gln Met Asn Gly Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys	
85 90 95	
Ala Arg Glu Lys Ala Val Arg Gly Ile Ser Arg Tyr Asn Tyr Tyr Met	
100 105 110	
Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser	
115 120 125	

<210> 63  
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 <212> DNA  
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<400> 63  
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 Val Met Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val Gly Asp Arg  
 1 5 10 15

gtc acc atc act tgc cgg gca agt cag agc att atc aga tat tta aat 96  
 Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ile Arg Tyr Leu Asn  
 20 25 30

tgg tat cag cac aaa cca ggg aaa gcc cct aag ctc ctg atc cat gct 144  
 Trp Tyr Gln His Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile His Ala  
 35 40 45

gca tcc agt ttg caa agt ggg gtc ccg tca agg ttc agt ggc agt gta 192  
 Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Val  
 50 55 60

tct ggg aca gat ttc act ctc acc atc agc agt ctg caa cct gaa gat 240  
 Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp  
 65 70 75 80

ttt gca act tac tac tgt caa cag agt tac act acc ccg tac act ttt 288  
 Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Thr Thr Pro Tyr Thr Phe  
 85 90 95

ggc cag ggg acc aag ctg cag atc aaa 315  
 Gly Gln Gly Thr Lys Leu Gln Ile Lys  
 100 105

<210> 64  
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 1 5 10 15

Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ile Arg Tyr Leu Asn  
 20 25 30

Trp Tyr Gln His Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile His Ala  
 35 40 45

Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Val  
 50 55 60

Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp  
 65 70 75 80

Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Thr Thr Pro Tyr Thr Phe  
 85 90 95

Gly Gln Gly Thr Lys Leu Gln Ile Lys  
 100 105

<210> 65  
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 <400> 71  
 agcatcacta gtacaagatt tgggctc 27

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35

<210> 73  
<211> 56  
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<400> 73  
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56

<210> 74  
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<212> DNA  
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<400> 74  
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36

<210> 75  
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<400> 75  
gcattctaga ctattatgaa cattctgtag gggc

34

<210> 76  
<211> 35  
<212> DNA  
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<400> 76  
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35

<210> 77  
<211> 34  
<212> DNA  
<213> Homo sapiens

<400> 77  
agtcgctcag ttcgtttgat ttcaagcttg gtcc

34